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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,000	01/21/2004	Scott J. Broussard	AUS920030872US1	4404

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EXAMINER	
WILSER, MICHAEL P	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/762,000	BROUSSARD ET AL.	
	Examiner	Art Unit	
	Michael Wilser	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/21/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-24 are pending in this application.

Drawings

2. The drawings are objected to because in the specification 1604 was used for allocate thread local heap in the specification and receive flattened/serialized objects from remote gJVM at local gJVM in the drawings and 1606 has been uses for receive flattened/serialized objects from remote gJVM at local gJVM in the specification and allocate thread local heap in the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet

submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim language is vague or indefinite:

(i) As per Claims 1, 9, and 17, line 8 cites the limitation "cluster". It is unclear as to how the virtual machines are to be clustered. The virtual machines could either be

clustered onto one computing device or spread across a network on different computing devices.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 9-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

(i) As per Claims 9-16, they are drawn to a computer program product, which the applicant has defined in the specification (page 52, lines 3-4) to encompass a transmission-type media signal. The Office considers an electronic signal to be a form of energy. Energy is not a series of steps or acts and this is not a process. Energy is not a physical article or object and as such is not a machine or manufacture. Energy is not a combination of substances and therefore not a compilation of matter. Thus, an electronic transmission signal does not fall within any of the four categories of invention. Therefore, Claims 9-16 are not statutory.

(ii) As per Claims 17-24, they are drawn to an apparatus, but appear to be comprised of software per se without claiming associated computer hardware required for execution i.e. Claim 17 recites means for running and means for associating without citing any corresponding computer hardware. Thus it is software per se that comprises software modules to perform certain functions.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 3-7, 9, 11-15, 17, and 19-23 are rejected under 35 U.S.C. 102(e) as being anticipated by van Rietschote et al. (US 7,213,246).

9. As per Claims 1, Rietschote teaches the invention as claimed including a method for operating a virtual machine within a data processing system (column 1, lines 5-10) comprising:

a. running a plurality of virtual machines one or more devices within the data processing system, wherein each virtual machine in the plurality of virtual machines incorporates functionality for interoperating with other virtual machines in a virtual machine cluster (Figure 1); and

b. associating the plurality of virtual machines in a virtual machine cluster, wherein each virtual machine in the virtual machine cluster acts as a node within the virtual machine cluster (column 2, lines 50-59).

10. As per Claim 3, Rietschote further discloses:

a. sharing load values representing computer resource utilization among the virtual machines in the virtual machine cluster (column 7, lines 23-28); and

b. performing a load-balancing operation across the virtual machine cluster (column 7, lines 23-28).

11. As per Claim 4, Rietschote further discloses:

a. determining that a CPU load utilization on a first virtual machine exceeds a threshold value (column 7, lines 23-28); and

b. moving a thread from the first virtual machine to a second virtual machine during a load-balancing operation (column 4, lines 11-27).

12. As per Claim 5, Rietschote further discloses:

a. determining that a memory load utilization on a first virtual machine exceeds a threshold value (column 7, lines 23-28); and

b. moving a set of one or more objects from the first virtual machine to a second virtual machine during a load-balancing operation (column 4, lines 11-27).

13. As per Claim 6, Rietschote further discloses moving a thread from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster (column 4, lines 11-27).

14. As per Claim 7, Rietschote further discloses moving a set of one or more objects from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster (column 4, lines 11-27).

15. As per Claims 9 and 17, they are rejected for the same reason as Claim 1 above.

16. As per Claims 11-15 and 19-23, they are rejected for the same reason as Claims 3-7 above.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 2, 10, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Rietschote et al. (US 7,213,246) in view of Dillenberger et al. (US 6,732,139).

19. As per Claim 2, Rietschote does not explicitly disclose of sharing information about the plurality of virtual machines within the virtual machine cluster such that a virtual machine can be added to the virtual machine cluster or such that a virtual machine may be removed from the virtual machine cluster as the plurality of virtual machines continues to run. However, Dillenberger discloses a method in which a virtual machine can be added or removed from a virtual machine cluster while the plurality of virtual machines continue to run (column 8, lines 1-3).

20. It would have been obvious to one of ordinary skill I the art at the time of invention to have added or removed virtual machines from the cluster in Rietschote's invention using Dillenberger's method. One would have been motivated to add or remove virtual machines so that if the demand for resources became higher the load-

balancing could be done more efficiently and if a machine had failed or was no longer needed it can be removed from the cluster.

21. As per Claims 10, and 18, they are rejected for the same reason as Claim 2 above.

22. Claims 8, 16, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Rietschote et al. (US 7,213,246) in view of Aridor et al. (US 6,618,737).

23. As per Claim 8, Rietschote does not explicitly disclose running a multi-threaded application within the virtual machine cluster or dispatching threads of the multi-threaded application on different virtual machines such that execution of the multi-threaded application spans multiple virtual machines. However, Aridor discloses a method that does run a multi-threaded application within the virtual machine cluster (abstract, lines 8-10) and dispatches threads of the multi-threaded application on different virtual machines such that execution of the multi-threaded application spans multiple virtual machines (abstract, lines 13-15).

24. It would have been obvious to one of ordinary skill in the art at the time of invention to have used the multi-threaded execution of Aridor's invention to handle multi-threaded application sin Rietschote's invention. One would have been motivated

to use the multi-threaded application capability since multi-thread programs are a common occurrence in computing and therefore the threads can be run as efficiently as possible by finding the best suited resource among the available resources.

25. As per Claims 16 and 24, they are rejected for the same reason as Claim 8 above.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bhowmik et al. (US 2004/0260982) System and Method for Scenario Generation in a Distributed System.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Wilser whose telephone number is (571) 270-1689. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST (Alt Fridays Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPW
November 19, 2007

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